

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Petition for Rulemaking of the Wireless)
Ethernet Compatibility Alliance To)
Permit Unlicensed National Information)
Infrastructure Devices To Operate in the)
5.470-5.725 GHz Band)

RM-10371

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To: The Commission

**COMMENTS OF ARRL, THE NATIONAL ASSOCIATION
FOR AMATEUR RADIO**

ARRL, The National Association for Amateur Radio, also known as the American Radio Relay League, Incorporated, (ARRL) by counsel and pursuant to Section 1.405 of the Commission's Rules, hereby respectfully submits its comments in response to the above-captioned Petition for Rulemaking, filed on or about January 15, 2002 by the Wireless Ethernet Compatibility Alliance (WECA). The WECA petition seeks unspecified rule changes¹ to permit the use of non-specific, unlicensed Part 15 intentional radiating devices at 5.470-5.725 GHz. The Petition was placed on public notice January 29, 2002. Therefore, these comments are timely filed. ARRL, in the interest of the approximately 650,000 licensees of the Commission in the Amateur Radio Service, states as follows:

¹ The petition improperly suggests that the Commission "allocate" the 5.470-5.725 GHz band for use by radio local area networks (RLANs) and other unlicensed devices. There can be no "allocation" of spectrum to unlicensed devices, so the petition does not propose an allocation. Instead, it must be seeking Part 15 rule changes, which are not detailed in a proposed appendix. It is impossible therefore to provide substantive comment on the details of the proposal.

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1. WECA's petition is fatally flawed in two respects: First, it fails to establish any current need to supplement the 300 MHz of spectrum that the Commission made available in 1997² for the exact same functions proposed by WECA. Second, it presupposes the outcome of the 2003 World Radiocommunication Conference (WRC), at which the issue of RLAN globalization is an issue. It asks the Commission to prejudge the international decisions on harmonization of RLAN operation that will occur at that conference. It would be inappropriate in the extreme for the Commission to make a decision concerning these devices prior to WRC-03.³

2. The petition touts the benefits of wireless broadband infrastructure in general terms, and from that premise, leaps to the conclusion that in the future, "freenets" at 5 GHz using the 802.11 (or a successor) standard will require additional bandwidth at 5 GHz and claims the ability to forecast (without explaining its forecasting methodology) how much will be necessary. Even if that generalized forecast of future spectrum needs in addition to the 300 MHz allocated only five years ago is presumed to be accurate, what the Petition doesn't do is to justify an additional accommodation for RLAN devices beyond the 300 MHz allocation in 1997 now. While ARRL does not dispute the utility of RLAN devices using the IEEE 802.11 standard (principally deployed presently at 2.4 GHz), or any future deployment of 802.11a devices at 5 GHz, the petition is devoid of any justification for expansion of the 300 MHz-wide U-NII band now.

3. At page 9 of the petition, WECA states as follows:

² See, *Report and Order, Amendment of the Commission's Rules to Provide for Operation of Unlicensed NII Devices in the 5 GHz Frequency Range*. FCC 97-5, released January 9, 1997 (ET Docket No. 96-102).

³ It is also inconsistent with Commission input to WRC preparatory meetings. The Commission's position at JRG 8A-9B meetings, for example, has been that sufficient accommodations already exist for RLAN devices at 5150-5350 MHz and 5725-5825 MHz, and that manufacturers must comply with existing Part 15 rules.

It is increasingly clear that a high quality experience for users of wireless technology requires more spectrum than currently provided by Part 15 of the FCC rules, particularly since the demand placed on the current bands by streaming video, audio and other multi-media presentations will only increase. Thus, to maintain its leadership in the global market, to allow U.S. manufacturers to produce compatible products, and to meet the other goals of the FCC's 1997 Order, the FCC must encourage the growth of the domestic market for 5 GHz devices and other RLAN products by allowing these services to develop and mature in the United States. This goal can only be achieved if the Commission allocates (sic) additional spectrum for extended broadband access.

This is the essence of WECA's argument, but it falls far short of what would be required to reopen the question of the sufficiency of the spectrum made available in the 1997 Order. There is no showing that the spectrum made available at that time for unlicensed NII devices is in any way insufficient for the purpose, now or in the future. Indeed, the Commission should allow the "domestic market for 5 GHz devices and other RLAN products" to develop, and see whether or not there is a need for additional spectrum for such devices. The "need" for additional spectrum is not directly related to the benefits of RLAN devices, and the WECA petition is insufficient for that reason

4. That a present expansion of the U-NII provisions in Part 15 is premature is apparent on the face of the Petition. At page 10, WECA states as follows:

Indeed, WRC03 Agenda Item 1.21 specifically states that the technical and regulatory requirements of wireless multimedia applications should be studied by ITU-R with a view to facilitate global harmonization. The WRC03 will consider the progress of these studies to devise an agenda item for WRC06, which will focus on global spectrum allocation issues and regulatory work. It is clear that international cooperation with respect to 5 GHz devices and spectrum allocation is progressing rapidly. On April 20, 2001, the Commission stated in a draft preliminary view on Agenda Item 1.21 that the view of the United States on these issues will be developed when more information is available from the ITU and other entities (citation omitted). This approach is contrary to the express goal of the Commission to provide U.S. manufacturers an opportunity to lead the development of 5 GHz devices. Rather than waiting for other countries to develop their positions on and demands for spectrum in the 5 GHz band,

the FCC should allocate (sic) additional spectrum immediately to allow U.S. manufacturers to maintain its world leading position in the development and sales of 5 GHz devices.

What WECA has stated is that the issue of global RLAN harmonization, obviously a necessary component of a worldwide market for these devices, is an agenda item for study at the next upcoming WRC, and for the one after that. The United States has already made available a huge amount of spectrum for these devices, which no one has alleged is presently insufficient for the purpose. WECA is suggesting therefore that the United States subvert the process already underway within the ITU and unilaterally attempt to force a particular outcome of the ongoing ITU study. The sole justification for this action is based on an unsupported assertion that more is better in the way of spectrum for unlicensed devices, and that future demand for RLAN devices and the spectrum necessary therefor can be adequately predicted by WECA now. The United States has, according to WECA, taken the position that it will formulate its views when more information is available from the ITU. Therefore, the United States has already decided to participate in the study. That is a reasonable course of action, looking toward global harmonization of RLAN operation, and one that ARRL, an active participant in WRC preparatory proceedings, supports. WECA's attempt to subvert the WRC preparatory process, and an ongoing ITU study, reveals a lack of understanding of the proper role of the Commission in international telecommunications planning.⁴

⁴ More troubling is WECA's suggestion at page 10 of the Petition that, because WRC03 Agenda Item 1.5 provides for consideration of regulatory provisions and spectrum requirements for new and additional allocations for the mobile, fixed, Earth exploration-satellite and a review of the radiolocation service allocation in the frequency range 5150-5725 MHz, the United States should therefore "protect American interests by allocating additional 5 GHz spectrum immediately." The United States should by no means take the "bull in the china shop" approach to international allocation planning suggested by WECA, or to

5. WECA cites a European Telecommunications Standards Institute (ETSI) study which allegedly concludes that, within the European Union, by the year 2010, a total of 540 MHz for the HYPERLAN/2 standard will be required. There is apparently now a total of 455 MHz available for HYPERLAN/2. WECA suggests that there is similarity between the HYPERLAN/2 standard and 5 GHz devices to be deployed in the future in the United States, so therefore the ETSI study is an accurate template for forecasting future spectrum demand in the United States. That is an apples and oranges comparison if there ever was one, and there is no indication that if the present domestic 300 MHz provision for RLAN devices at 5 GHz proves insufficient, it can't be remedied at a later date. Nor does the argument take into account other technologies and other wireless LAN opportunities that the Commission has addressed recently in other bands. For example, the Commission has just authorized unlicensed Ultra-Wideband technology communications devices on frequencies above approximately 3 GHz, and it has allowed high-powered Part 15 devices to operate at 24 GHz with wide bandwidths for the same purpose. WECA's petition is based on pure conjecture, and it should take its forecasts for future demand for 5 GHz unlicensed RLAN devices to the ITU for consideration at WRC-03, which is an appropriate forum presently for future spectrum needs projections.

6. WECA next rather blithely suggests that the existing rules for RLAN devices at 5 GHz should be made applicable to the additional spectrum it **seeks** for these devices, and that such are sufficient to preclude interference to, among other services, the Amateur Service. To the contrary, this proposal would be the third, and ultimate, knockout punch to the Amateur Service at 5 GHz. In its 1997 *Report and Order* which

prejudge in any way the outcome of an international conference only a year hence. The WECA petition is

allowed U-NII devices to operate in, among other bands, 5.725-5.825 GHz, the Commission stated as follows:

With regard to sharing this band with amateur operations, we believe that U-NII devices will cause little interference to amateur operations because of the relatively low power with which U-NII devices will operate. Further, we note that the amateur service has access to all spectrum within the 5.65-5.925 GHz range. We therefore believe that amateur operation will be able to avoid using frequencies within the 5.725-5.825 GHz band that are available to U-NII devices, in those rare cases where such avoidance may be necessary.

Report and Order, at ¶ 48.

There was much wrong with this position, not the least of which is that fixed stations in a licensed radio service with a specific allocation in a band are required to move or cease operation due to, or to avoid, interference from unlicensed devices. That is exactly the reverse of the proper policy regarding unlicensed devices. While the Commission's assumption of the lack of interference hasn't been significantly tested due to the relative dearth of U-NII devices deployed in the band 5.725-5.825 GHz to date, the presumption fails because it doesn't account for aggregate interference. The aggregate effect of interference is all too apparent in the 2400-2450 MHz band, and the same effect can be easily anticipated at 5.725-5.825 GHz. In any case, the Commission failed to protect the Amateur Service from interference from U-NII devices in this segment. That, however, was just the beginning.

7. In 1999, the Commission allocated the 5.850-5.925 GHz band for Intelligent Transportation Services Dedicated Short Range Communications (DSRC).⁵ Amateur

premature on its face and must be dismissed.

⁵ See, the ***Report and Order***, FCC 99-305, 14 FCC Rcd. 18221 (released October 22, 1999), in ET Docket No. 98-95.

operation in that segment was specifically conditioned on non-interference to DSRC communications, and the Commission in that proceeding again noted that the Amateur Service had available "275 megahertz of spectrum in the 5.650-5.925 GHz band." This allocation, together with the high power mobile characteristics of DSRC operation in this segment band, has all but rendered the band unuseable to the Amateur Service. The WECA petition would take the remainder of the band (save for only 5.825-5.850 MHz). Thereafter, the Amateur Service will have suffered displacement from, or been allowed only significantly compromised access to, in the aggregate, more than 250 MHz of spectrum in this band. The Commission's decisions concerning this band, to date, have been made without the slightest effort at reaccommodation of displaced fixed Amateur stations in equivalent spectrum elsewhere. Before the Commission could even consider the Draconian action proposed by WECA in this petition, it would have to conduct an overall study of the real need for any additional U-NII spectrum, and as well conduct a thorough analysis of the impact of the proposal on incumbent services, including the Amateur Service.

8. Finally, (and for the third time⁶ in as many rulemaking proceedings recently), ARRL is constrained to note that the Commission has routinely taken actions authorizing unlicensed Part 15 intentional radiators without technical evidence allowing it to conclude that the devices so authorized will not interfere with incumbent licensed radio services. Absent the Commission's ability to make that finding, it cannot allow the marketing or deployment of unlicensed Part 15 devices, without violating Section 301 of the Communications Act of 1934, as amended. Section 302(a) of the Act allows the

⁶See, **ARRL** Petition for Reconsideration in ET Docket No. 98-156, filed February 13, 2002, and **ARRL** Comments, ET Docket No. 01-278, filed February 12, 2002.

Commission to make reasonable rules governing the interference potential of these devices, but it does not allow the Commission to allow them to operate on ~~an~~ unlicensed basis. There is no support in the four comers of the WECA petition for the conclusion that U-NII devices operating at 5.650-5.725 GHz will not cause interference to the Amateur Service. Therefore, the Commission cannot conclude, on the information before it regarding interference potential, that U-NII devices can be authorized on an unlicensed basis.

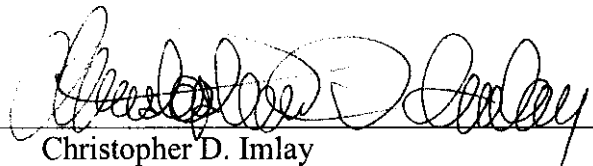
Therefore, the foregoing considered, *ARRL*, the National Association for Amateur Radio, respectfully requests that the instant Petition for Rulemaking be denied.

Respectfully submitted,

ARRL, the National Association for Amateur Radio

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By: _____

A handwritten signature in black ink, appearing to read "Christopher D. Imlay", written over a horizontal line.

Christopher D. Imlay
Its General Counsel

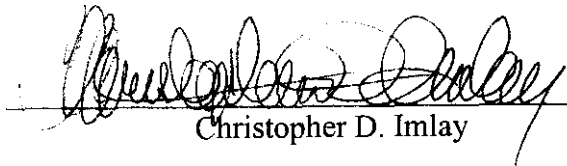
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February 28, 2002

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, do hereby certify that a true copy of these Comments of ARRL, The National Association For Amateur Radio, were, this 28th day of February, 2002, caused to be mailed, via First Class United States Mail, postage prepaid, to the following:

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